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Electrically detected spin resonance in epitaxial graphene[1]
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Graphene is an appealing material for electron-spin quantum computing (QC) and spintronics, due to the expected weak spin-orbit interaction, and the scarcity of nuclear spin in natural carbon. Due to QC and spintronics, the microwave control and electrical detection of spin have become topics of interest, now in graphene nanostructures, where the small number of spins limits the utility of traditional spin resonance. Here, we report results of an experimental study examining the microwave response of epitaxial graphene.[1] The results suggest the possibility of resistive detection of spin resonance, and they provide a measurement of the g-factor and the spin relaxation time in this novel system.

[1] R. G. Mani, J. Hankinson, C. Berger, and W. de Heer, Nature Comm. 3, 996 (2012).

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